SUMMARY FOR FE-25-03
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Burlington Northern Santa Fe Corporation
Location: Fresno, California
Region: 7

Month: September
Date: Sept. 24, 2003
Time: 1:10 a.m., PST

Data for Fatally Injured Employee(s)

Yard Foreman
35 years old
2 years, 3 months of service
Last rules training: June 7, 2003

Data for All Employees (Craft, Position, Activity)

Craft: Transportation and Engine

Positions:

Yard Job YFSR 301 23A (Job 301)
Yard Foreman
Switchman Helper
Engineer

Assistant Trainmaster
Engineer operating another train in the yard

Activity: Switching

EVENT

A Yard Foreman was fatally injured when struck by rail equipment when he fell from a freight car during a switching movement.

SUMMARY FOR FE-25-03 CONTINUED

POSSIBLE CONTRIBUTING FACTORS

PCF No. 1

Investigators concluded that poor train handling (throttle and brake actions) by the Engineer may have caused, or contributed to, the Yard Foreman falling off the side of the freight car.

REPORT: **FE-25-2003**

RAILROAD: Burlington Northern Santa Fe Corporation (BNSF)

LOCATION: Fresno, California

DATE &TIME: Sept. 24, 2003; 1:10 a.m., PST

EVENT[1]: The Yard Foreman was fatally injured when struck by rail equipment when he fell from a freight car during a switching move.

EMPLOYEE:

Craft:	Transportation and Engine (T&E)
Activity:	Switching
Occupation:	Yard Foreman
Age:	35 Years
Length of Service:	2 Years, 3 Months
Last Rules Training:	June 7, 2003

CIRCUMSTANCES PRIOR TO THE ACCIDENT

A Burlington Northern Santa Fe Railroad (BNSF) crew of Yard Job YFSR 301 23A (Job 301**)**, comprising a Yard Foreman, Switchman Helper, and an Engineer reported for duty to Calwa Yard in Fresno, California, at 11 p.m. on Sept. 23, 2003, after completing the statutory off duty period. The Engineer held a regular position on the crew. The Yard Foreman was called off the extra board, and the Switchman Helper was taken off his regular assignment to fill a vacancy on the job.

After receiving a job briefing by the Assistant Trainmaster, the Yard Foreman drove the rest of the crew to the Visalia main track via company vehicle. The Engineer boarded the locomotive, and the Switchman Helper stayed on the ground to line back the derail. The Yard Foreman left in the company vehicle to line switches ahead of the train, where the crew was to pull a cut of cars from the Visalia Main to Calwa Yard Track No. 5154. That having been accomplished, and after performing a number of yard switching duties, the crew of Job 301 operated eastward onto Track No. 5156 to pull a cut of cars from that track. As the cars were being pulled westward out of Track No. 5156, the Yard Foreman and Switchman Helper noticed that two of the 38 cars on the list were missing.

---

[1] "Event" is defined as "occurrence that immediately precedes and directly results in the fatality." Possible contributing factors are identified in the following report and attached summary.

The movement was stopped, and the Yard Foreman rode the leading or easterly car back onto the track to couple into the two missing cars.

THE ACCIDENT

The accident occurred shortly after the Yard Foreman climbed on the north side or "A" end of RBOX 31644, the easterly car, and then told the Engineer via portable radio, "Back up approximately 50 cars." The Switchman Helper of Job 301 corrected him by saying, "You mean forward." Since the locomotive attached to the cars was facing eastward, an eastward movement was forward. Both the Yard Foreman and the Switchman Helper were on the opposite side of the train from the Engineer's position in the locomotive cab. The Switchman Helper remained in the vicinity of the 5156 switch while the shoving move was in progress.

The Engineer initiated the shoving move, using a short period of high throttle use (position 6), which resulted in high traction motor amperage, followed shortly thereafter by throttle modulation between positions two and three. After he had moved approximately 20 car lengths eastward, at a speed of 4 to 6 mph, and had not heard any further instructions, the Engineer called the Yard Foreman and asked, "How are we looking?" At that point, he heard a faint response. An Engineer operating another train in the yard communicated via radio that he heard the Yard Foreman say, "I fell off the car; 301, that'll do." Then, the Engineer and the Switchman Helper heard, "301, that'll do."

The Engineer used the independent brake to bring the train to a stop within 158 feet from the location where he heard the Yard Foreman had fallen off the car. None of the cars had functioning air brakes because the air hoses had not been coupled by the train crew. However, switching without air brakes is a common practice that allows crew members to cut cars, allowing them to travel onto the track desired. Air brakes would cause cars to stop abruptly after being cut from the train.

The Assistant Trainmaster was at the east end of the yard giving a departing train a roll by inspection when he heard the communication over the radio. He immediately went to the accident scene and found the Foreman crushed beneath the L3 wheel of covered hopper car DOWN 21209, six cars behind the easterly car he was last seen riding. The Yard Foreman's switch list and lantern were found together between the rails, 22 feet west of the body. The portable radio used by the Yard Foreman was found near the same location, about three feet outside of the north rail.

After finding his body, the Assistant Trainmaster called 911 and directed the responding Fresno Police Department, Fresno Fire Department, and an American Medical Services ambulance to the scene. The Yard Foreman was declared dead at the scene by the Fresno County coroner at 1:29 a.m., on Sept. 25, 2003.

POST-ACCIDENT INVESTIGATION

When last seen by the Switchman Helper, the Yard Foreman was riding the lead or easterly car, RBOX 31644, as it was shoved eastward onto Track No. 5156. It appeared he either fell from or was dislodged from the lead car at some point and for unknown reasons ended up under the wheels of covered hopper car DOWN 21209. Investigators did not find evidence of blood on any of the wheels of the six cars that were ahead of the car under which the body was found. The Federal Railroad Administration's (FRA) track inspection revealed no defects that may have caused or contributed to the accident.

An Operating Practices Inspector with the California Public Utilities Corporation (CPUC) reviewed the deceased employee's operating rules test records; tests were current. Records also indicated that the employee was qualified as a Switch Foreman. The operational testing records of the deceased employee also were inspected. They revealed he had been subjected to 84 rules observations with three safety rules failures in July 2001, for which he had received verbal warnings. All of the safety rule failures concerned S13.1.3 General Requirements (Crossing tracks greater than 25 feet from standing equipment, and not crossing in front of moving equipment unless safe); S13.1.4 General Requirements (Do not sit or stand on rails or track structure unless duties require, do not stand or sit on top of equipment, do not sit on steps of moving engines or cabooses, do not sit or lie under or lean against standing equipment unless duties require, and do not stand or sit on engine or caboose hand rails); and S21 Personal Protective Equipment. No recent failures on the efficiency tests were found.

A CPUC Mechanical Inspector conducted mechanical inspections, finding no defects that may have caused or contributed to the accident.

FRA's post-accident toxicological testing was conducted on the Engineer and Switchman Helper at an area hospital. The results were found to be negative. The Coroner's office conducted an FRA fatality toxicology test on the deceased. Results of these tests were negative.

The portable radio used by the Yard Foreman and the radio from the locomotive used by Job 301 were inspected by the BNSF Radio shop and were found to be working as intended.

The Road Foreman of Engines indicated that the event recorder download showed that the throttle had been in the run six position when shoving the 36 cars. Then, the throttle dropped to run three, and then idle. It took the locomotive 158 feet to stop. The Road Foreman did not believe that slack action could have knocked the Yard Foreman off of the car. However, FRA's review of the event recorder data revealed a short period of high throttle use (position 6), resulting in high traction motor amperage, followed shortly thereafter by throttle modulation between positions two and three. This evidence led investigators to conclude that train handling may have caused, or contributed to, the employee falling or being dislodged from the side of the freight car at some point during the throttle and brake actions of the locomotive Engineer.

The Forensic Pathologist stated that the immediate cause of death was traumatic severing of the torso at the pelvis and amputation of the right arm.

BNSF operating officers conducted a safety stand down after the accident and held safety meetings for all crews at terminal points to discuss the fatality. Appropriate safety rules were reviewed. Rules classes with an instructor were offered at Richmond, Stockton, Fresno, and Bakersfield, California. The classes were voluntary and were conducted by a Rules Instructor.

APPLICABLE RULES

Burlington Northern Safety Rules

1.1.2 Alert and Attentive

1.20 Alert to Train Movement

2.13 In Place of Hand Signals

5.3.7 Radio Response

6.5 Handling Cars Ahead of Engine

S-1.1 Job Safety Briefing

S13.1.5 Riding In or On Moving Equipment